

CLAIMS

What is claimed is:

1. A window lifter geared motor assembly comprising:
a drive shaft driven about a drive shaft axis;
a reduction gearset rotationally driven by said drive shaft, said reduction gearset driven about a reduction gearset axis; and
a sensor having a state dependent upon a distance between said reduction gearset axis and said drive shaft axis.
2. The geared motor assembly according to Claim 1, wherein said reduction gearset is rotationally driven about a reduction shaft, said reduction shaft being supported with respect to a casing by a bearing, and said sensor is located on said bearing.
3. The geared motor assembly according to Claim 1, wherein said drive shaft is supported with respect to a casing by a bearing, and said sensor is located on said bearing.
4. The geared motor assembly according to Claim 1, wherein said state of said sensor determines whether said drive shaft is driven.
5. The geared motor assembly according to Claim 1, wherein said sensor is a piezoresistive sensor.
6. The geared motor assembly according to Claim 1, wherein said assembly further comprises an electric motor rotationally driving said drive shaft.
7. The geared motor assembly according to Claim 6 wherein said electric motor is in a casing, and further including a damper that dampens movements of said electric motor in said casing.

8. The geared motor assembly according to Claim 7, wherein said damper is a spring positioned between said casing and said electric motor.
9. The geared motor assembly according to claim 1 wherein operation of the window lifter geared motor assembly is stopped when said sensor detects that said distance exceeds a threshold value.
10. The geared motor assembly as recited in claim 1 wherein operation of the window lifter geared motor assembly is reversed when said sensor detects that said distance exceeds a threshold value.
11. The geared motor assembly as recited in claim 1 wherein said drive shaft and said reduction gearset have a worm and a wheel connection.

12. A method of detecting a object trapped in a window lifter geared motor assembly comprising the steps of:

- providing a drive shaft having a drive shaft axis;
- providing a reduction gearset having a reduction gearset axis; and
- sensing a distance between said drive shaft axis and said reduction gearset axis.

13. The method as recited in claim 12 further including the step of stopping operation of the window lifter geared motor assembly when said distance exceeds a threshold value.

14. The method as recited in claim 12 further including the steps of providing an electric motor in a housing that drives said drive shaft and damping movements of said electric motor in said housing;

15. The method as recited in claim 12 further including the step of reversing operation of the window lifter geared motor assembly when said distance exceeds said threshold value.

16. The method as recited in claim 12 wherein the step of sensing is performed by a sensor.

17. The method as recited in claim 16 further including the step of supporting said drive shaft with a bearing, and said sensor is positioned on said bearing.

18. The method as recited in claim 16 further including the steps of rotationally driving said reduction gearset about a reduction shaft and supporting said reduction shaft with a bearing, and said sensor is positioned on said bearing.